

**ABSTRACT**

A print engine controller includes control circuitry for permitting external clients to read and write registers and to read and write to a memory device. A data bus is connected to the memory device. A data interface is connected to the data bus to be interposed between the data bus and a microprocessor so that the microprocessor can write data to the memory device. A serial interface is connected to the data bus to be interposed between the data bus and the microprocessor so that the microprocessor can access the registers of the control  
10 circuitry and registers of the memory device. Page expansion circuitry is connected to the data bus and is configured to receive data representing compressed pages and to render that data into dot data representing dots. Formatting circuitry is connected to the data bus for receiving the dot data and for formatting the dot data for printing. A printhead interface is interposed between the formatting circuitry and the printhead chips to receive the dot data from the formatting circuitry and to communicate the dot data to the printhead chips.